

**Identification of inorganic improvised explosive devices by
analysis of post-blast residues using portable capillary
electrophoresis instrumentation and indirect photometric
detection with a light-emitting diode**

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| | |
|-------------------|----|
| Figure S- 1 | 4 |
| Figure S- 2 | 5 |
| Figure S- 3 | 6 |
| Figure S- 4 | 7 |
| Figure S- 5 | 8 |
| Figure S- 6 | 9 |
| Figure S- 7 | 10 |
| Figure S- 8 | 11 |
| Figure S- 9 | 12 |

Figure captions:

Figure S- 1 Analysis of anions extracted from post-blast residue resulting from a commercial Ammonium Nitrate/Fuel Oil (ANFO) explosive device.

Conditions: The post-blast residue aqueous sample was injected without dilution.
The capillary electrophoresis method used is outlined in Figure 2.

Figure S- 2 Analysis of cations extracted from post-blast residue resulting from a commercial Ammonium Nitrate/Fuel Oil (ANFO) explosive device.

Conditions: The post-blast residue aqueous sample was injected without dilution.
The capillary electrophoresis method used is outlined in Figure 3.

Figure S- 3 Analysis of anions extracted from post-blast residues resulting from commercial and improvised Black Powder explosive devices. Black Powder explosive devices typically consist of potassium nitrate, sulphur and charcoal.

Conditions: The post-blast residue aqueous samples were injected without dilution. The capillary electrophoresis method used is outlined in Figure 2.

Figure S- 4 Analysis of cations extracted from post-blast residues resulting from commercial and improvised Black Powder explosive devices.

Conditions: The post-blast residue aqueous samples were injected without dilution. The capillary electrophoresis method used is outlined in Figure 3.

Figure S- 5 Analysis of anions extracted from post-blast residues resulting from an improvised explosive mixture containing chlorate, perchlorate and sugar. Specifically, the inorganic salts used in the composition of the explosive were potassium chlorate/potassium perchlorate.

Conditions: The post-blast residue aqueous sample was injected without dilution.
The capillary electrophoresis method used is outlined in Figure 2.

Figure S- 6 Analysis of cations extracted from post-blast residues resulting from an improvised explosive mixture containing chlorate, perchlorate and sugar.

Conditions: The post-blast residue aqueous sample was injected without dilution.
The capillary electrophoresis method used is outlined in Figure 3.

Figure S- 7 Analysis of anions extracted from post-blast residues resulting from an improvised explosive mixture containing sodium chlorate and sugar.

Conditions: The post-blast residue aqueous sample was injected without dilution.
The capillary electrophoresis method used is outlined in Figure 2.

Figure S- 8 Analysis of cations extracted from post-blast residues resulting from an improvised explosive mixture containing sodium chlorate and sugar.

Conditions: The post-blast residue aqueous sample was injected without dilution.
The capillary electrophoresis method used is outlined in Figure 3.

Figure S- 9 Determination of cations in ANFO post-blast residues performed immediately after detonation of the explosive device by the Australian Bomb Data Centre. The portable instrumentation was set up in a mobile laboratory on the munition range and was powered using a diesel generator.

Conditions: The post-blast residue, dissolved in 3 mL Milli-Q, was spiked into methanol (1:20 dilution) before injection. The capillary electrophoresis method used is outlined in Figure 3. The ambient temperature was 7 °C.

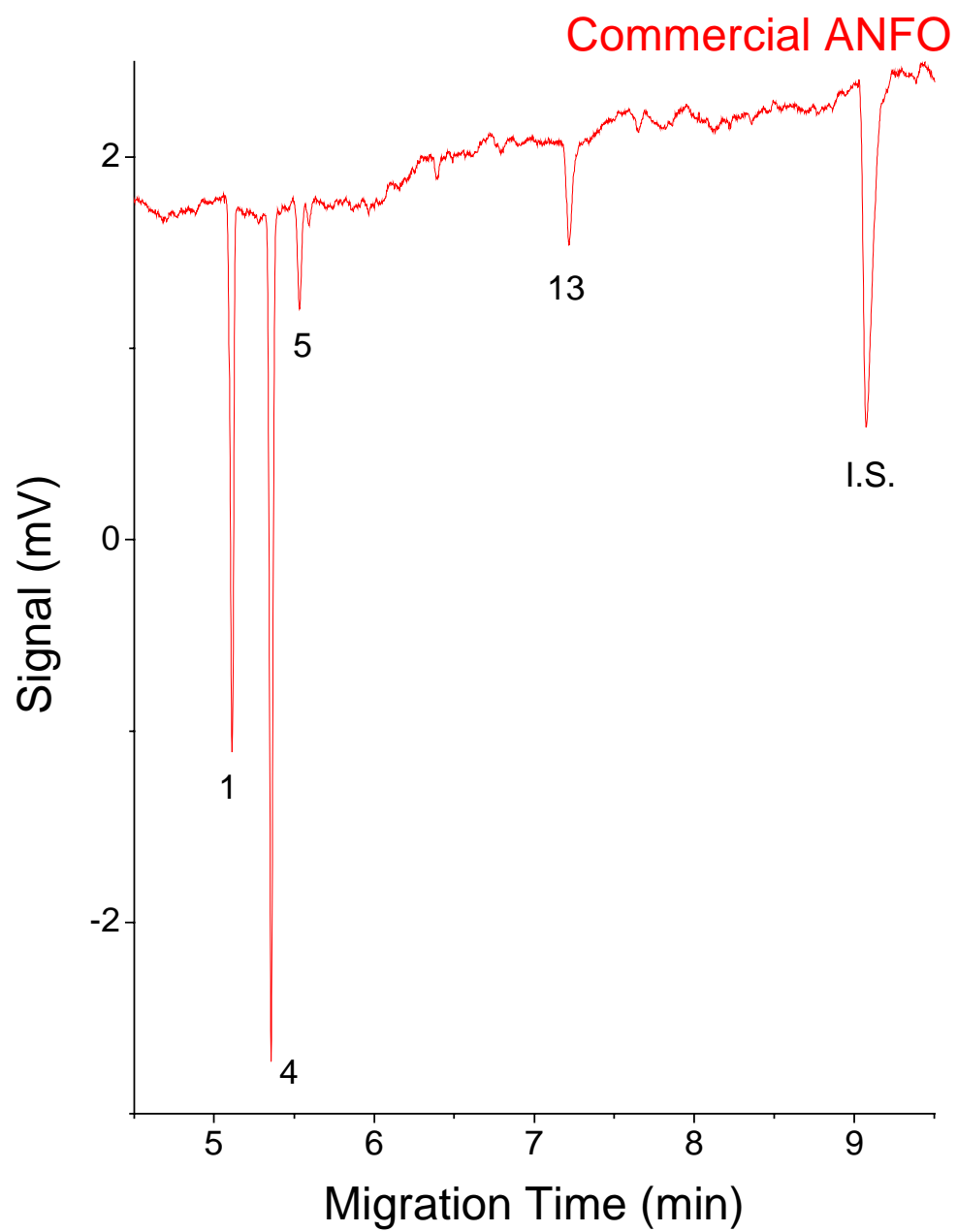


Figure S- 1

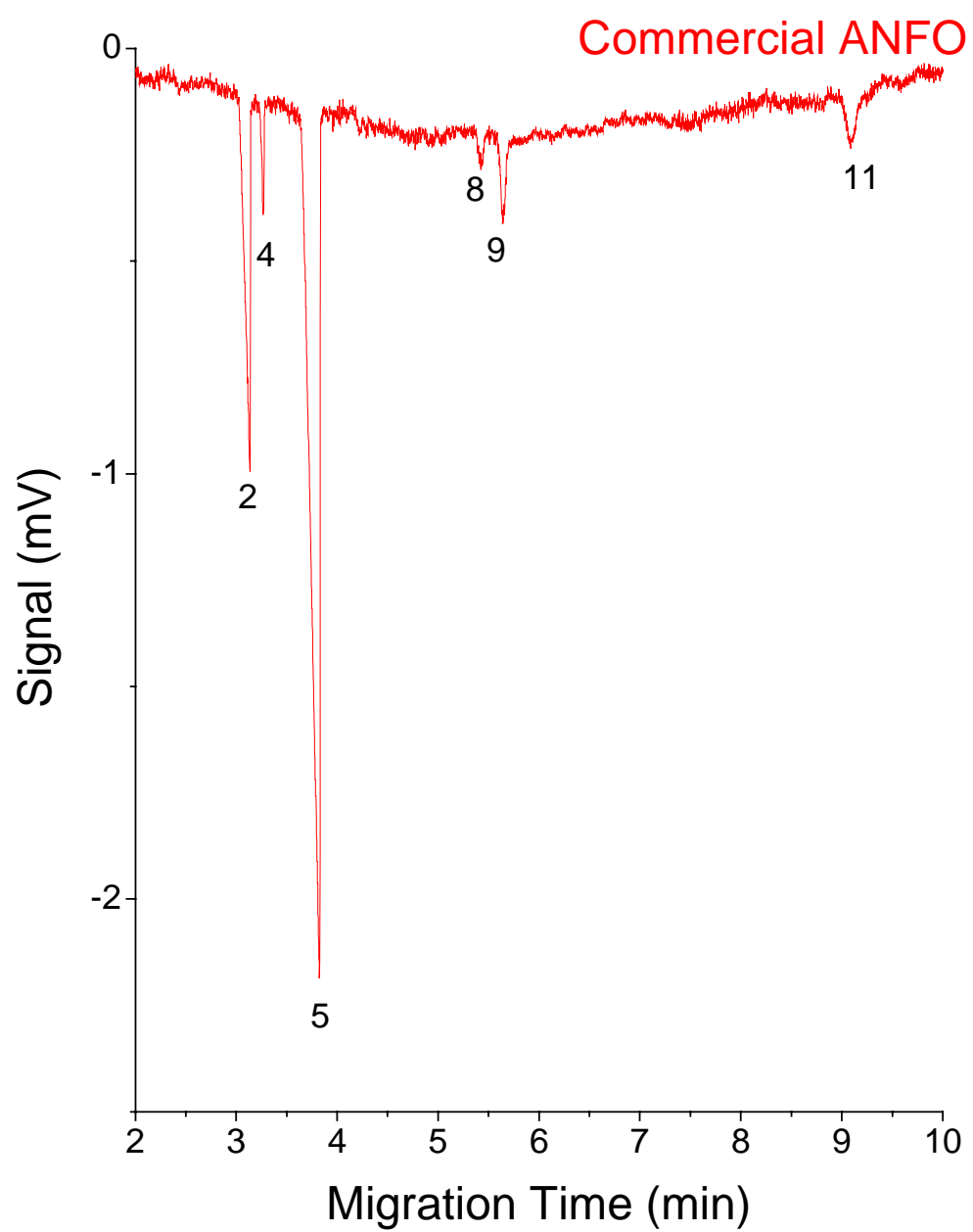


Figure S- 2

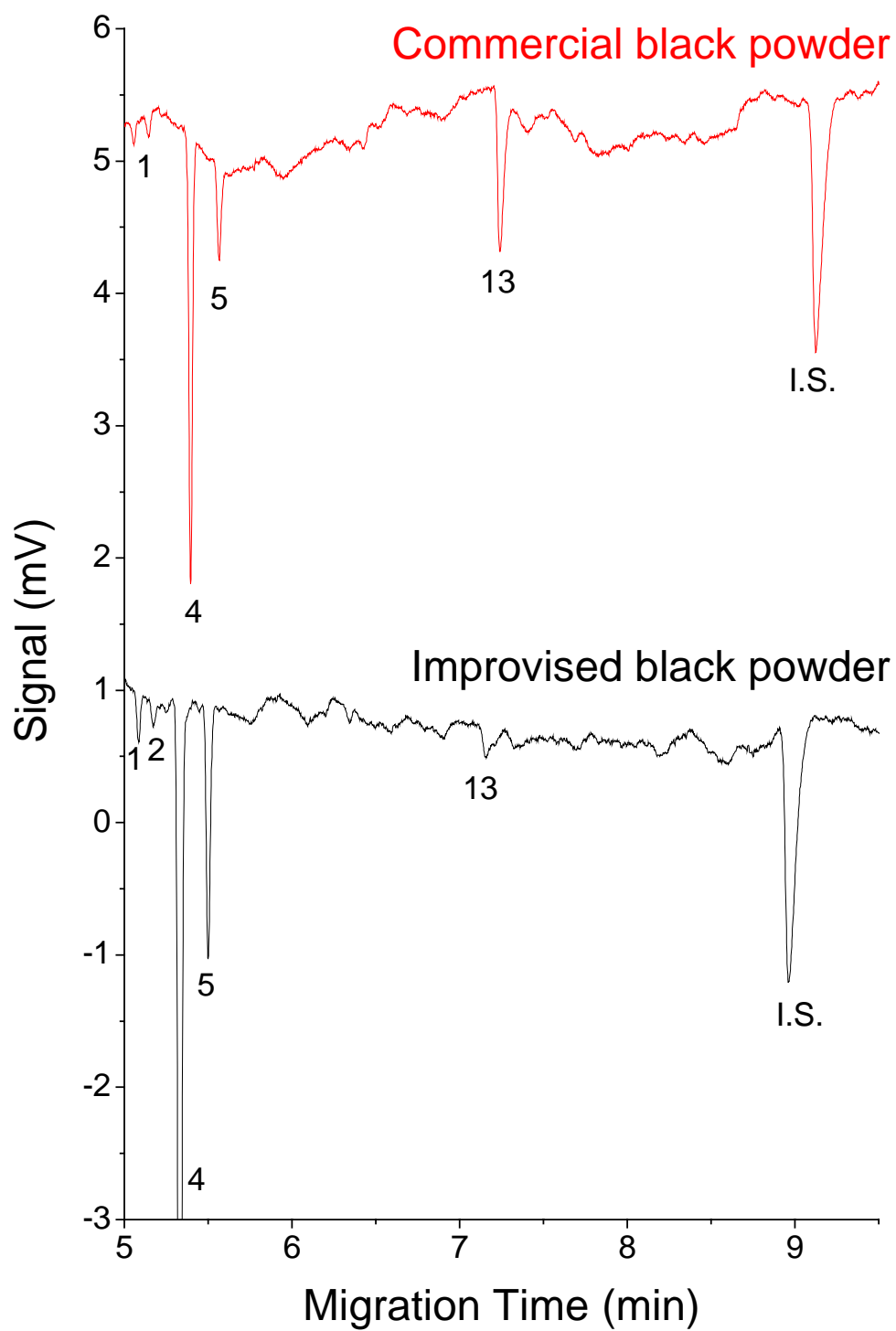


Figure S- 3

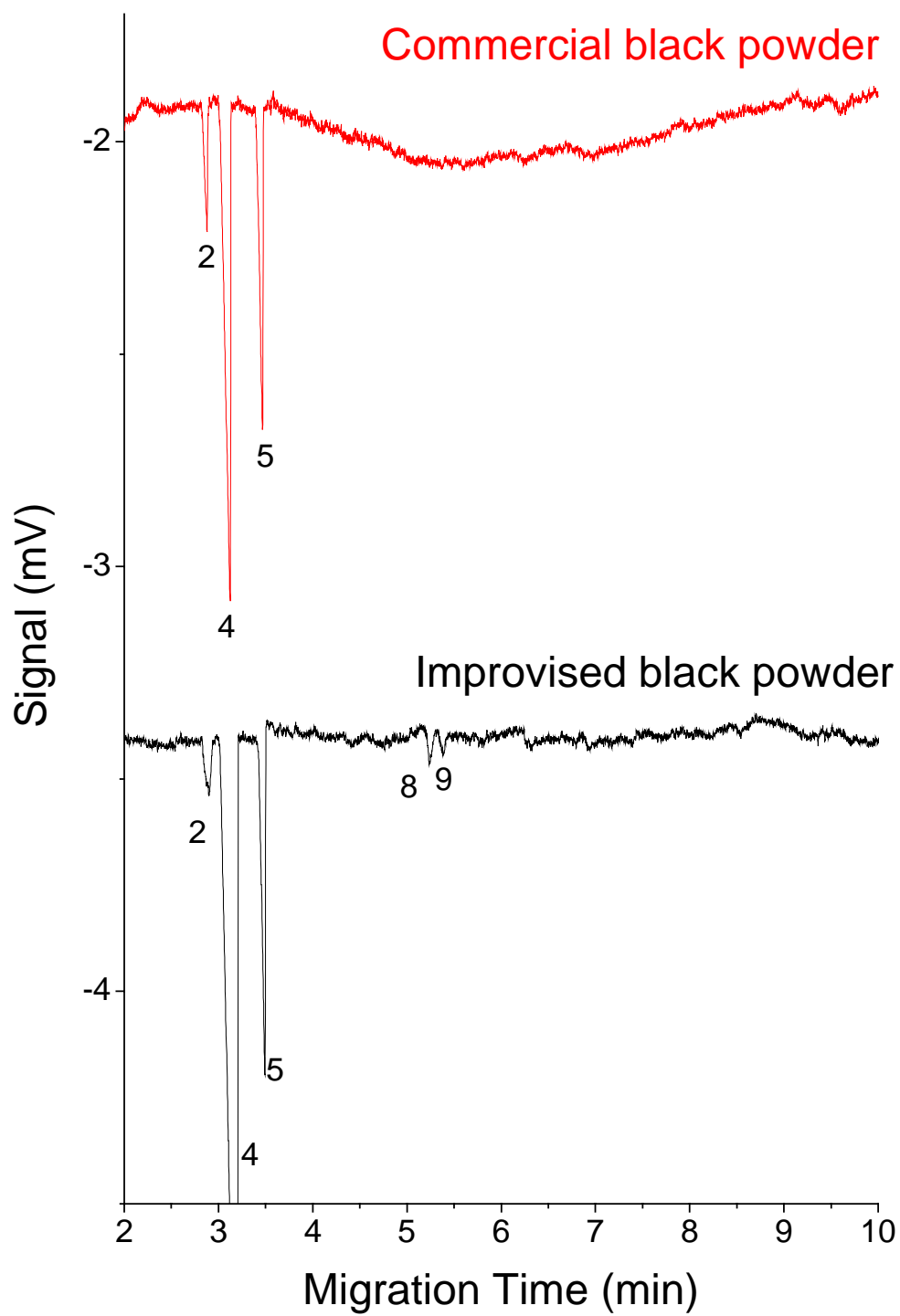


Figure S- 4

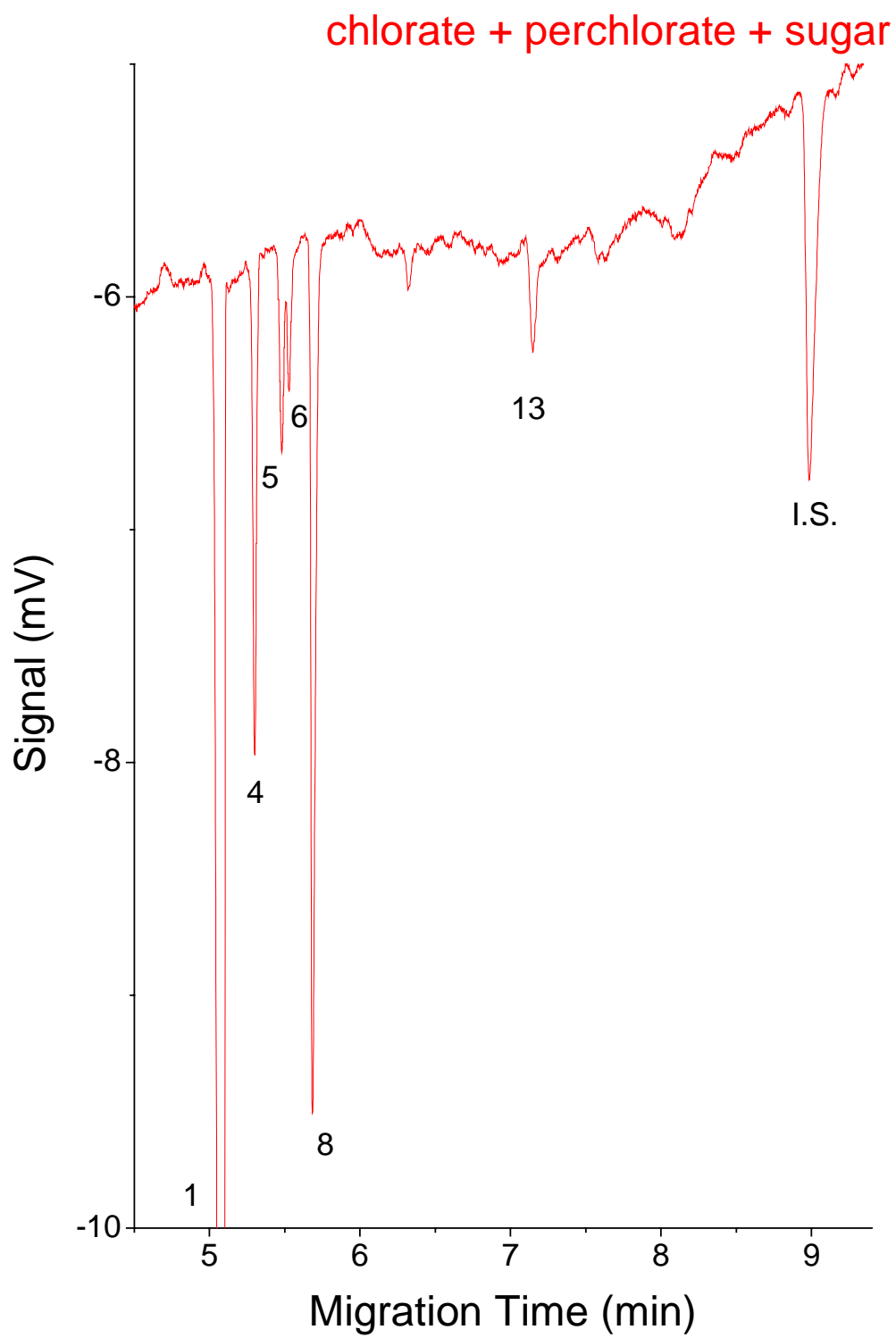


Figure S- 5

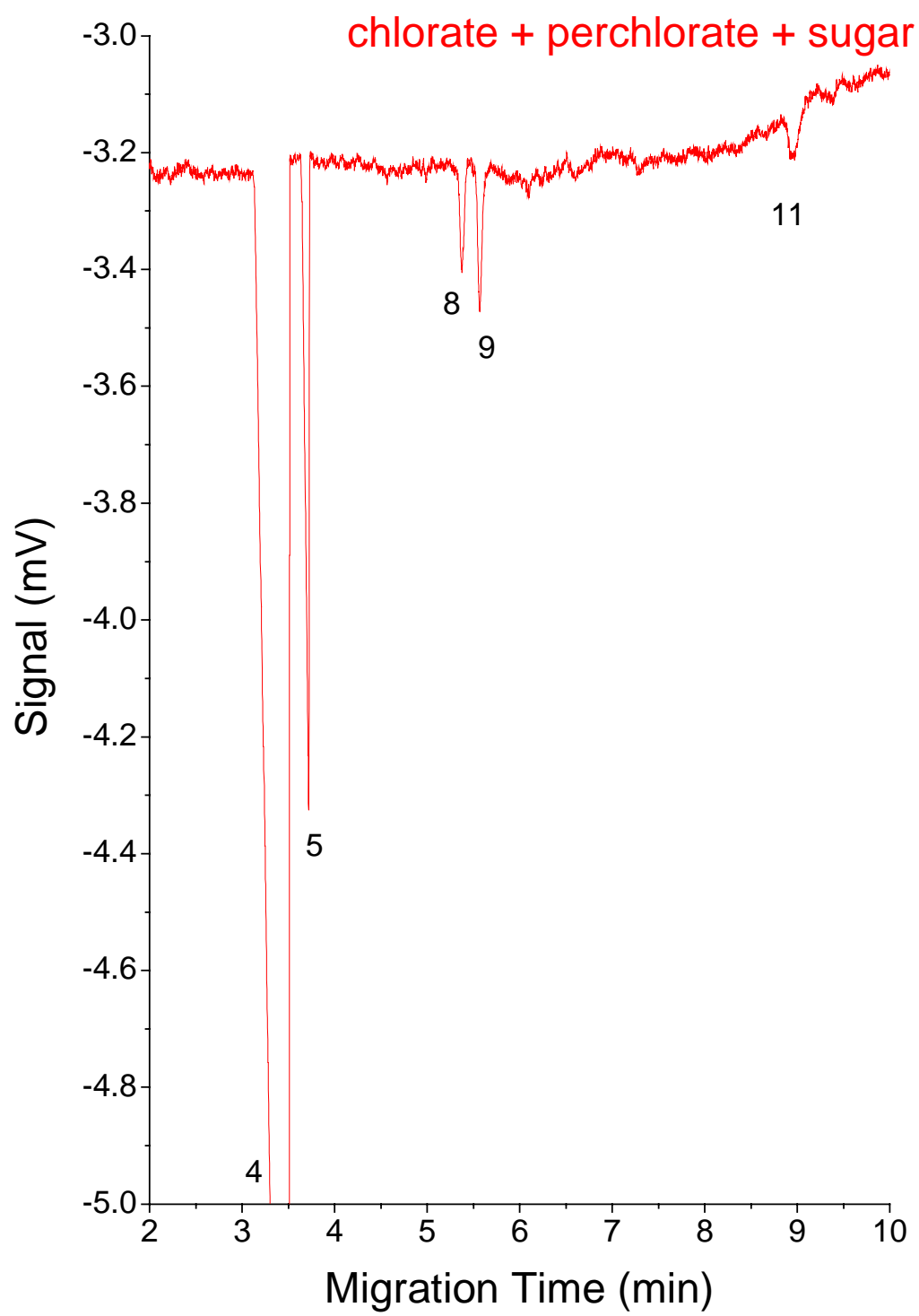


Figure S- 6

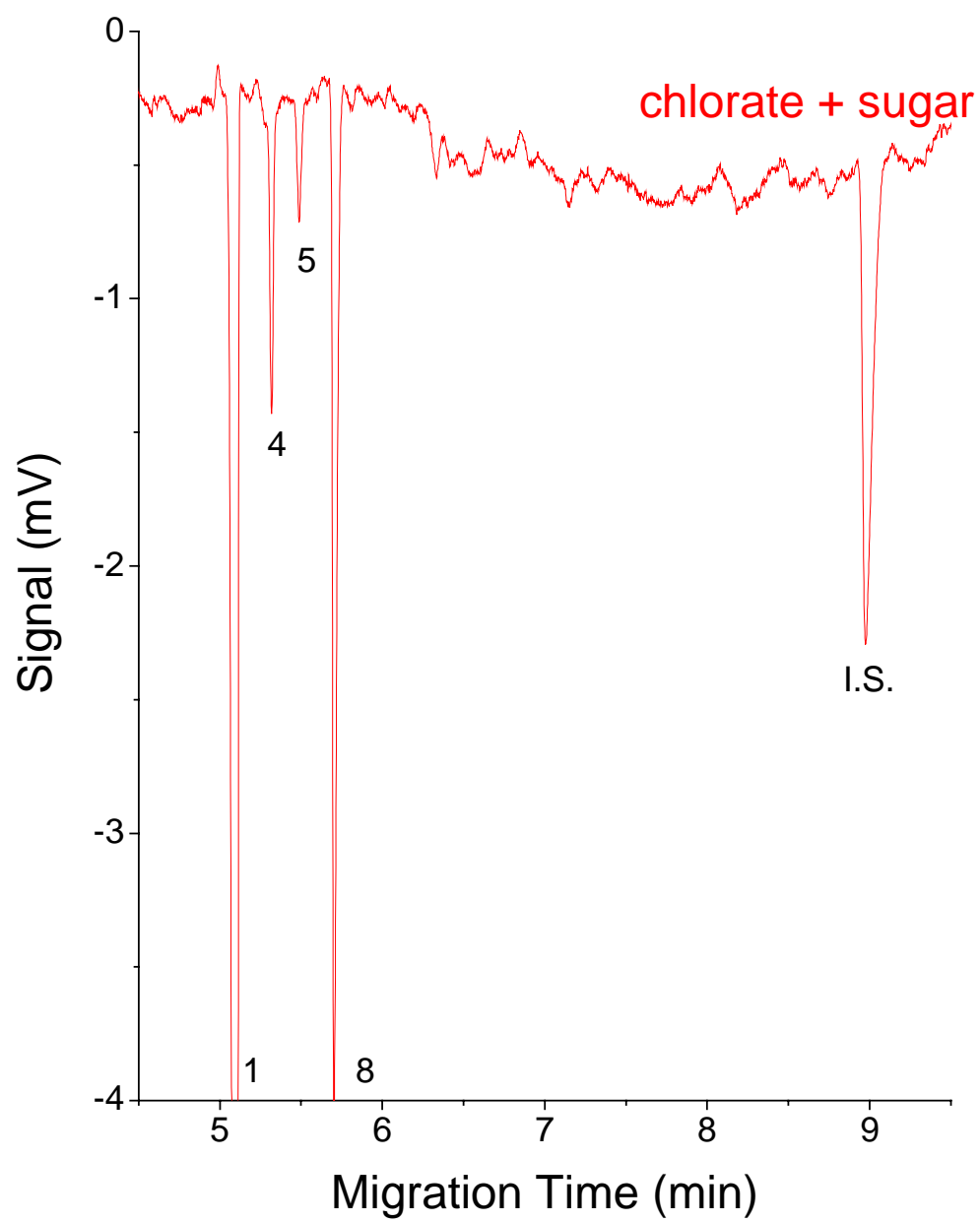
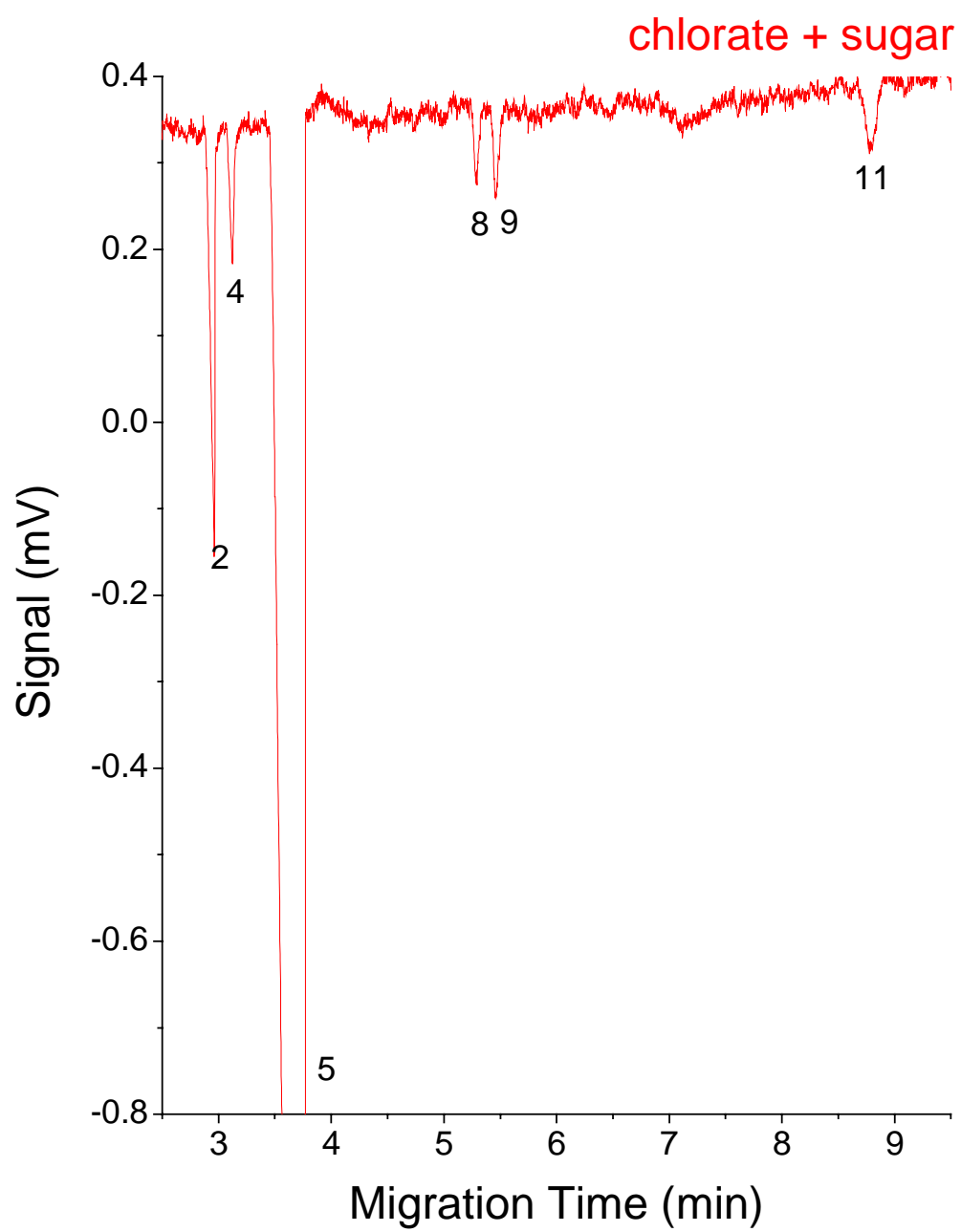


Figure S- 7

**Figure S- 8**

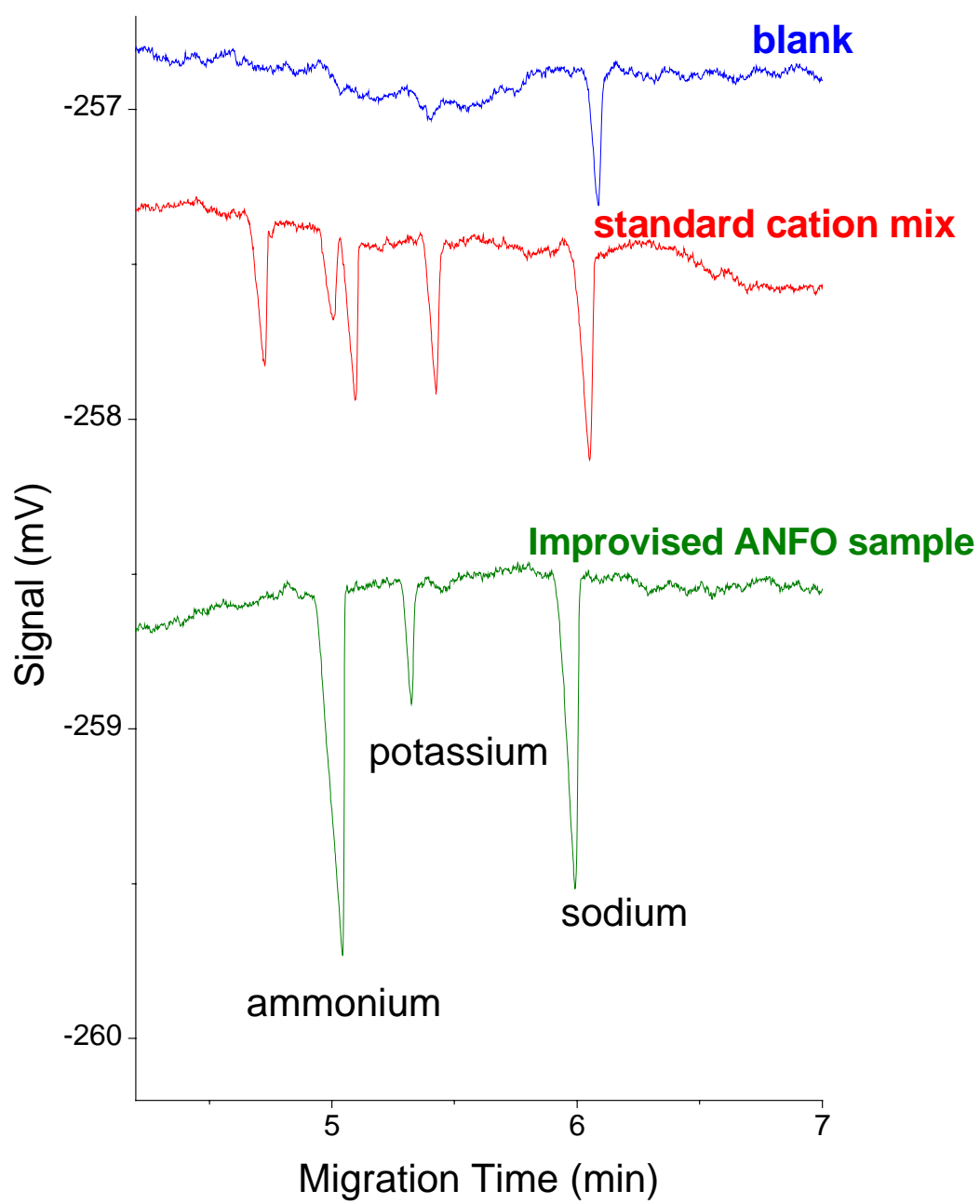


Figure S- 9